Final decision

Electricity transmission network service providers

Roll forward model

September 2007

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Shortened forms

ACCC	Australian Competition and Consumer Commission
AER	Australian Energy Regulator
capex	capital expenditure
DRP	draft statement of regulatory principles
ETNOF	Electricity Transmission Network Owners Forum
MAR	maximum allowed revenue
NER	National Electricity Rules
PTRM	post-tax revenue model
RAB	regulated asset base
RFM	roll forward model
SRP	statement of regulatory principles
TNSP	transmission network service provider
WACC	weighted average cost of capital

1. Introduction

The Australian Energy Regulator (AER) is responsible for regulating the revenues of transmission network service providers (TNSPs) in the National Electricity Market (NEM) in accordance with the National Electricity Rules (NER).

In January 2007 the AER developed and published its first proposed roll forward model (RFM) and invited submissions from interested parties. The AER received six submissions in response to the first proposed RFM.

This decision sets out the AER’s consideration of comments raised in relation to the first proposed RFM. It has been prepared to satisfy the AER’s obligations under clause 6A.20(e) of the NER.

2. Rule requirements

The RFM has been developed by the AER under clause 6A.6.1 and will be used to calculate the opening regulated asset base (RAB) for future transmission revenue determinations.

The RFM must comply with the relevant requirements prescribed in the NER under clause 6A.6.1 and schedule 6A.2. Clause 6A.6.1(d) of the NER requires the AER to develop and publish the RFM by 28 September 2007.

In accordance with clause 11.6.18, the AER will apply the first proposed RFM for the purpose of making transmission determinations for SP AusNet and ElectraNet in 2008.

3. Reasons for the RFM

The AER will use the RFM to determine the closing RAB for TNSPs at the end of each regulatory control period. The RFM rolls forward the TNSP's RAB for each year of the current regulatory control period to reflect capital expenditure (capex) and depreciation during that period. The closing RAB for the current regulatory control period becomes the opening RAB for the purposes of determining the revenue requirement for the next regulatory control period and is used as an input to the post-tax revenue model (PTRM).

4. Issues raised in submissions and the AER response

4.1 Depreciation

The ability of the RFM to accommodate depreciation profiles other than the straight-line method was raised during consultation on the first proposed RFM. Given the relevance of this issue to both the RFM and the PTRM, the AER's consideration of the treatment of depreciation is contained in section 4.1 of the *Final decision—Post-tax revenue model* (September 2007).

AER decision

The AER considers that the straight-line depreciation method is most likely to satisfy the requirements in clause 6A.6.3(b) and has retained this depreciation method as the default position in the RFM, although the AER will in each case assess the depreciation schedules against the requirements of clause 6A.6.3(b). The use of straight-line depreciation as the default method has been noted in the RFM handbook. TNSPs may propose a method other than straight-line but must justify how it satisfies the requirements of the NER. Adjustments may be made to the RFM for implementing alternative depreciation calculations in consultation with the AER as part of pre-lodgement discussions.

4.2 Recognition of capital expenditure

A number of submissions raised the issue on the regulatory accounting methodology for recognising capex. Given the relevance of this issue to both the RFM and the PTRM, the AER's consideration of the recognition of capex is contained in section 4.3 of the *Final decision—Post-tax revenue model* (September 2007).

AER decision

The AER considers that the partially as-incurred (or hybrid) approach for recognising capex should be retained as the default position in the RFM because it is most likely to be consistent with the requirements of the NER. The recognition of capex on a partially as-incurred approach as the default position has been noted in the RFM handbook. TNSPs may propose a full as-incurred approach and, if the AER accepts this, adjustments may be made to the RFM for implementing this approach, in consultation with the AER as part of pre-lodgement discussions.

4.3 Capitalisation formulae

4.3.1 Half WACC allowance

The Electricity Transmission Network Owners Forum (ETNOF) submitted that the RFM should apply an allowance based on a half-nominal weighted average cost of capital (WACC) instead of a half-real WACC for the timing assumption of capex occurring in the middle of the year.

AER response

The RFM requires actual capitalisation to be provided by TNSPs as inputs. The AER considers that it is reasonable to assume that actual capex is undertaken evenly over a year and therefore a TNSP's reported annual capex values may be more appropriately recognised as middle of the year values. Consequently, the AER accepts that a half-nominal WACC formulation is appropriate when these inputs reflect middle of the year values and has made the relevant formula adjustments to the RFM. The AER has also included notes in the relevant input cells of the RFM specifying the timing assumption of the inputs—that is, end of the year terms or middle of the year terms.

AER decision

The AER has changed the capitalisation formulae in the RFM to apply a half-nominal WACC.

4.3.2 Compounding interest formulation

ETNOF submitted that the RFM should accommodate the use of a simple interest capitalisation formulation for the half WACC, where this method was applied in previous regulatory determinations.

AER response

The first proposed RFM applied a semi-annual compound interest formulation for the half WACC. The AER acknowledges that previous determinations may have applied a simple interest calculation as a proxy for the half WACC allowance. However, it considers that going forward it is appropriate to apply the compound interest formulation in the RFM as it represents a more accurate approach to modelling the half WACC. The AER notes that the NERA Economic Consulting report accompanying ETNOF's submission stated that the use of a semi-annual compounding formulation is consistent with financial theory and practice.[1]

AER decision

The AER has maintained the application of a compound interest formulation for the half WACC allowance in the RFM.

4.3.3 Final year adjustment for differences

ETNOF submitted that the input values for forecast net capex, assets under construction, and the prudent additional capex allowance arising in the last year of the previous regulatory control period should be grossed up by a half WACC allowance. ETNOF stated that this would ensure consistency with the half WACC formulation applied to actual net capex in the **Adjustment for previous period** sheet of the RFM.

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[1] NERA Economic Consulting, *AER's first proposed post-tax revenue model, roll forward model and efficiency benefit sharing scheme—ETNOF*, 1 May 2007, p. 4.

AER response

The AER notes that the specified input values referred to in the **Adjustment for previous** period sheet are used to adjust for the corresponding final year (forecast) values of the previous RFM. The input values for actual net capex are grossed up by a half WACC allowance because it is assumed that capex on average is incurred in the middle of the year.[2]

However, the input values for forecast net capex and forecast assets under construction[3] in the RFM are in end of the year terms and should be directly obtained from the RFM of a previous determination.[4] Forecast net capex input values, obtained from the previous RFM, already include a half WACC allowance. Similarly, where relevant to a TNSP's previous determination, the input values for prudent additional capex allowance and foregone return on additional capex are in end of the year terms and are directly available from the RFM of a previous determination.[5] Therefore, the AER considers that it is unnecessary to apply a half WACC formulation to these inputs.

AER decision

The AER has not applied a half WACC formulation to the input values for forecast net capex, assets under construction and prudent additional capex because these are in end of the year terms and are directly available from the RFM of the previous determination.

4.4 Actual inflation adjustment

ETNOF and EnergyAustralia raised the issue of adjusting for actual inflation in the RFM. It was argued that there is inconsistency with how inflation is applied in the RFM compared with how it is applied in determining outturn maximum allowed revenues (MAR) during the previous regulatory control period. To amend the inconsistency, submissions have proposed that the same inflation measures be used when calculating actual nominal depreciation in the RFM as those applied when calculating the MAR—that is, on a lagged basis.

AER response

The AER's assessment of NERA's report in support of the ETNOF submission is that it appears reasonable to modify the actual inflation indexation formula on a lagged basis for the calculation of nominal depreciation. This will give effect to the

2 The AER has amended the half WACC formulation applied to actual net capex to refer to the nominal vanilla WACC because actual capex inputs are assumed to be middle of the year values (see section 4.3.1).

3 Forecast assets under construction values are only applicable to TNSPs that have transitioned to recognising capex from an as-commissioned approach to a partially as-incurred (hybrid) approach.

4 Alternatively, the forecast assets under construction values may be obtained from the opening asset base input in the PTRM of a previous determination.

5 Where relevant to a TNSP's previous determination, the actual assets under construction input values to be provided by the TNSP should be in end of the year terms.

requirements of the NER such that the previous value of the RAB must be adjusted for outturn inflation consistent with the methodology used for the indexation of the MAR during the regulatory control period.

AER decision

The AER accepts the approach to indexing the RAB in the RFM submitted by ETNOF and EnergyAustralia. The RFM has been amended to ensure consistency with how actual inflation measures are applied in calculating the MAR.

4.5 Previous revenue determinations

ETNOF submitted that the objective of the RFM is to give effect to previous revenue determinations. It considered that the AER should explicitly state that, where the proposed RFM is inconsistent with the methodology applied in a previous revenue determination, the RFM would need to be adjusted.

ETNOF also submitted that the RFM should allow the flexibility for adjustments where the capex incentive framework of the previous determination differs from that of the NER, upon which the RFM is based.

AER response

The AER has identified several input requirements that are specific to previous revenue determinations and these are provided for in the RFM. For example, the RFM can accommodate inputs for assets under construction, prudent additional capital expenditure or foregone return on additional capital expenditure, and can be used where applicable for relevant TNSP determinations. To the extent that there is any remaining input required to give effect to a previous determination and it is not accommodated by the RFM, the AER considers that it would be appropriate to adjust the RFM. Therefore, if a TNSP identifies a specific requirement to give effect to a previous determination and the AER accepts this, adjustments to the RFM may be made in consultation with the AER as part of pre-lodgement discussions.

In relation to the claim that the RFM should be adjusted for different capex incentive frameworks, the AER notes that the RFM is based on the capex incentive framework within the NER and does not require adjustment for previous capex incentive frameworks. The 2005 New South Wales transmission determinations incorporate capex incentives based on the Australian Competition and Consumer Commission's (ACCC) 2004 statement of regulatory principles (SRP). However, the capex incentive framework in the NER, on which the RFM has been developed, is largely consistent with the SRP.

The AER maintains a separate RFM based on the capex incentive framework of the ACCC's 1999 draft statement of regulatory principles (DRP). This separate RFM was developed by the AER to apply to revenue resets where the preceding revenue cap decision was determined under the DRP framework.

AER decision

The AER recognises that where it is identified that there is an input required to give effect to a previous determination and it is not accommodated by the RFM, it would be appropriate to adjust the RFM. Adjustments to the RFM may be made for implementing a specific input requirement to give effect to a previous determination in consultation with the AER as part of pre-lodgement discussions.

The AER considers that no adjustment to the RFM is necessary to accommodate a different capex incentive framework such as that based on the DRP. It maintains a separate RFM that applies the capex incentive framework of the DRP.

4.6 Mechanism for rolling forward tax asset values

The AER has decided that the RFM should accommodate a mechanism to roll forward tax asset values between regulatory control periods.

Tax asset values are required inputs into the PTRM. Therefore, it is desirable to roll forward these values within the RFM. The AER considers it appropriate to include a mechanism to roll forward tax asset values from one regulatory control period to the next, based on the approach adopted within the PTRM.

AER decision

The AER has amended the RFM to include a mechanism to roll forward tax asset values. This feature is discussed in the RFM handbook.

4.7 Other AER modifications to the model

The AER has made the following refinements to the RFM:

- ETNOF's suggestion that the use of the term *economic depreciation* should be removed has been accepted. References to *economic depreciation* have been changed to *regulatory depreciation*.

- The **Adjustment for previous period** sheet has been simplified by removing the need to roll forward the asset value for the final year of the previous regulatory control period with adjustments for actual inflation. This is because inflation during the final year of the previous regulatory control period is known at the time when the previous revenue determination was made.

- Additional formulae have been included so that the asset base roll forward outputs are reported for a regulatory control period of up to 10 years.

Appendix A: Submissions received on the RFM

The following interested parties provided submissions on issues relevant to the AER’s first proposed RFM:

- Alinta
- Electricity Transmission Network Owners Forum
- Energex
- EnergyAustralia
- Major Energy Users Inc.
- TransGrid.

Copies of these submissions are available on the AER’s website at www.aer.gov.au.

Appendix B: Roll forward model

Appendix C: Roll forward model handbook